

Ebbsfleet Decarbonisation Plan

August 2023



Ebbsfleet
DEVELOPMENT CORPORATION



EBBSFLEET
GARDEN CITY

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01

Welcome to Ebbsfleet

Ebbsfleet Garden City is an emerging planned new community developing on brownfield land on the banks of the River Thames between Dartford and Gravesend in North Kent, and has been designated by Government as the first new Garden City in a century.

The Ebbsfleet Implementation Framework sets out the vision for Ebbsfleet based on garden city principles, where London meets the Garden of England on the banks of the River Thames.

Ebbsfleet seeks to exploit its strategic location and excellent transport connections to continue the tradition of great place-making in the UK. Combining the best of urban and rural living within the unique landscapes inherited from its industrial legacy, Ebbsfleet aims to embrace neighbouring communities and towns, creating cohesive communities connected by modern public transit, offering a diverse range of opportunities to live, work and play for people of all ages, backgrounds and incomes.

The development will deliver up to 15,000 homes within walkable neighbourhoods. Schools, parks, shops and community facilities will be at the heart of these neighbourhoods, enabling residents to enjoy a high quality of life, with easy access to everything they need for healthy and successful lives.

EDC has identified a need to make a step change on environmental performance, with a particular emphasis on reducing carbon emissions. This decarbonisation plan reflects the work that has gone into understanding the scale of this challenge and sets the pathway for significant and long-lasting carbon reduction.

Ebbfleet Development Corporation

The Ebbfleet Development Corporation (EDC) is an Urban Development Corporation established by Government in 2015.

Our objective is to secure the regeneration of the designated urban development area within the Dartford Borough Council, Gravesham Borough Council and Kent County Council areas - through the delivery at pace of the vision set out in the Ebbfleet Implementation Framework.

We are the local planning authority for development management functions within the urban development area.

Whilst the Corporation has a direct role in investing and delivering projects within the area, we also play a crucial leadership role, partnering and collaborating with stakeholders – public, private and voluntary sector – to deliver the overall vision for Ebbfleet. These partnerships form the bedrock of EDC's work.

Sustainability in Ebbfleet

The Ebbfleet Implementation Framework defines six key moves to embed exemplary sustainability and resilience into the masterplanning, travel systems, utilities and green infrastructure of Ebbfleet. These moves ensure Ebbfleet is planned as a collection of walkable neighbourhoods, that make it easy, safe and attractive to walk and cycle across the area, and to adopt active and healthy lifestyles.

In 2021 EDC published our Environmental Sustainability Framework and Action Plan to bring together our activities around environmental sustainability into a single programme.

This programme compliments EDC's placemaking work around economic development and inclusive growth, and community development and social value, to cover all three pillars of sustainable development.

The Environmental Sustainability Framework has been developed from the relevant United Nation's sustainability goals, which have been assimilated into five priority areas; Carbon, Water, Waste, Health and Wellbeing, and the Natural Environment.

The associated action plan includes over 80 actions across all five priority areas, and focuses on the sustainability of the places that we are building in Ebbfleet, the facilitation of sustainable behaviours within our communities, and improving our own organisational performance.

Ebbsfleet Environmental Sustainability Framework

Strategic priority	Ebbsfleet Environmental Outcomes
Carbon	Energy use: Ebbsfleet will aim to be net zero carbon upon completion
	Energy generation & distribution: EDC projects aim to be exemplar in energy generation and usage
Water	Water use: Minimise net water supply from outside the Ebbsfleet Garden City area
	Water quality: Provide access to a broad range of affordable leisure and sports activities within Ebbsfleet's water courses
	Flood resilience: EDC projects to prioritise green and blue sustainable drainage to achieve resilience to 1% annual exceedance probability
Waste	Waste reduction : Minimise construction and operational waste and maximise domestic recycling
	Waste reduction : Promote circular economy through EDC procurement, partnerships, and investment
	Healthy materials : Promote sustainable building materials within EDC projects (where appropriate)
Health and wellbeing	Environment: Create a healthy environment where people are empowered to enjoy a high quality of life and improved life expectancy, supported through sustainable buildings and civic infrastructure
	Sustainable travel : Net zero travel-based carbon emissions per person per day
	Healthy buildings : Deliver comfortable and accessible buildings
Natural Environment	Greening the city : To create a healthy, biodiverse and attractive landscape, including 400 ha of newly accessible green and blue spaces that supports active lifestyles
	Biodiversity : To achieve net positive species impact

02



We will ensure that our roadmap toward a zero carbon Garden City underpins all that we do and that the quality – of homes, buildings and places – is at the forefront of our agenda.

Chair's Foreward
EDC Corporate Plan 2021-25

Vision

The vision for Ebbsfleet is grounded in strong sustainability principles, and these are evidenced by the approach that EDC has established within the Ebbsfleet Environmental Sustainability Framework. This section explains how the Framework's vision and goals set the ambition for this decarbonisation plan.

Ambition

Ebbsfleet's Environmental Sustainability Framework sets two key ambitions for carbon and energy; to be net zero carbon upon completion, and to be an exemplar for energy generation, distribution, and efficiency.

To deliver on these ambitions, EDC will lead by example, ensuring our development reflects the highest levels of design quality and environmental sustainability, using modern methods of construction where appropriate to improve efficiency and performance of homes in their journey toward achieving zero carbon homes.



Renewing the ambition

Since EDC was formed in 2015, the need for urgent action to tackle climate change has been made even clearer. Across the UK, local authorities have declared climate emergencies and set net zero targets for as early as 2030, far in advance of the national target of 2050.

In this context, our ambition of reaching net zero carbon when completed is a leading and ambitious statement. This decarbonisation plan establishes what the implications are for Ebbsfleet.

This decarbonisation plan defines the scope of the carbon footprint, assesses current and future carbon emissions, tests strategies to meet the ambition, highlights key actions and provides a mechanism for tracking progress.

An integrated approach

The decarbonisation plan is not a standalone document. EDC has also developed a Sustainability Performance Framework, detailing actions across the five priority areas of carbon, water, waste, health and the natural environment. The actions in this decarbonisation plan are fully aligned with those in the Sustainability Performance Framework, as well as our approach to inclusive growth and community development.

Moreover, significant decarbonisation cannot be achieved by EDC alone. This plan is relevant to all Ebbsfleet stakeholders, especially our local communities.

03

Carbon Management

Carbon reduction does not happen by chance; it requires assessment, reduction and removal of carbon throughout the entire lifecycle of assets, networks and systems.

There are four overarching principles of best-practice carbon management in the built environment set out in the newly-published PAS 2080:2023. These are introduced in this section and applied to Ebbsfleet.

Principle 1

Managing whole life carbon through control and influence

It is necessary to identify all the activities that result in carbon emissions or removals under the control or influence of EDC within the boundary of Ebbsfleet.

To ensure a comprehensive carbon assessment, a carbon model was developed for the Ebbsfleet urban development area following the Green House Gas Protocol for communities (GPC). This standard uses the geographical boundary of the Ebbsfleet redline boundary, then the model assesses the annual operational carbon impacts of buildings and energy, transport, waste and water, and land use management.

As Ebbsfleet is a major new development, the carbon model also estimates the embodied carbon impacts of constructing the homes. Over the period to 2050, the cumulative embodied carbon is more than 3 times the operational carbon.

EDC as the owner of a number of development sites will enable the delivery of many new homes, as well as major public infrastructure. The EDC ambition to lead by example needs to apply at a systems level, maximising the cumulative carbon reduction potential across sectors and sources.

EDC's role as the planning application determining authority also provides the opportunity for influence over early stages of new development across the Ebbsfleet area. This is a critical point, since carbon reduction opportunities are often more easily adopted earlier in the development cycle. EDC can provide supplementary non-statutory planning guidance, monitoring and reporting requirements and technical assistance, particularly focused at local businesses and SMEs.

Principle 2

Aligning to net zero carbon transition

It is necessary to set carbon reduction targets that align and support a science-based transition to net zero carbon.

C40 Cities is a global network of cities who followed a science-based methodology to set the overarching target of halving emissions between 2020-2030 and reaching zero carbon by 2050. While this is differentiated by region (and more stringent in Europe), many cities have set more ambitious goals. Notably, the Greater London Authority is now aiming to be net zero by 2030.

Although Ebbsfleet is not a global megacity, using the GPC standard applies the same reporting principles and so a comparable target to global cities is appropriate.

Principle 3

Applying the carbon reduction hierarchy

It is necessary to follow the carbon reduction hierarchy when identifying potential opportunities to reduce whole life carbon.

The hierarchy prioritises the following types of opportunity:

- 'Avoid' - Ask whether a new asset is required, or if the same performance outcomes can be provided without it by other means, e.g. retrofitting an existing building rather building new.
- 'Switch' - Assess alternative means of providing the same performance outcomes, e.g. providing cycling infrastructure to reduce private car usage.
- 'Improve' - Identify how to extend the life or increase the efficiency of the proposed solution, e.g.

This amounts to taking a long-term view that considers the systemic impact of present-day decision-making. There is close alignment here with the wider EDC emphasis on well-designed and well-served neighbourhoods, which are built to last and provide high-quality local amenities, which should reinforce the decarbonisation plan.

Principle 4

Implementing appropriate Governance

It is necessary to embed whole life carbon into business and management processes, and define and establish roles and responsibilities for decarbonisation outcomes.

The current EDC Corporate Plan sets out a clear position, and this should inform all decision-making that has a significant carbon impact.

To implement this effectively, EDC require a process to actively promote the identification and implementation of carbon reduction opportunities. The leadership, procurement, delivery and operational management processes should be adapted to align with the decarbonisation plan.

Communicating the EDC plan and goals early and working with supply chains to co-develop an approach for decarbonisation delivery is critical to success. High resolution spatial data are needed to track progress in each sector and evaluate the effectiveness of the suggested measures and policies. Sharing quality data and tools with our residents and partners will enable us to achieve sustained change with optimal costs.

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Pathways to Zero Carbon

The Ebbsfleet Carbon Model gives a comprehensive spatial assessment of carbon emissions and removals over time. The model can interrogate alternative pathways by assessing the impact of different carbon reduction strategies.

Development to date

Ebbsfleet is being developed at pace, with over 3000 homes being constructed since EDC was established in 2015. Some of the homes currently built were constructed to the (now obsolete) Code for Sustainable Homes standard, while others were built to the minimum standards in Building Regulations. The majority are heated by individual gas boilers.

While Ebbsfleet is built around an international rail interchange, currently private cars are still the prevailing mode of transport amongst residents. The relaunch of the Fastrack bus scheme in 2025, serviced by a new fleet of all electric buses, and providing a new segregated route through to Bluewater should encourage more sustainable travel going forwards.

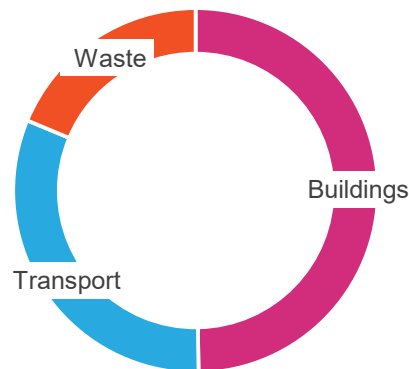
Residential waste collection is controlled by Dartford and Gravesham borough councils, while waste processing is the responsibility of Kent County Council. Currently, all non-recycled waste is incinerated.

Over 40% of land area within Ebbsfleet is masterplanned as open space, which includes the Swanscombe Peninsula SSSI. However, the carbon sequestration rates are low due to the established habitat types.

14,700 tonnes
in 2022

Current carbon impact

The carbon model captures the key emissions sources across Ebbsfleet. Using the development schedule and planning application data, the estimated operational emissions in 2022 within the EDC redline boundary were 14,700 tCO₂e.



The operational emissions are 50% in buildings, 30% in transport and 20% in waste. There are small quantities of avoided emissions due to on-site renewable electricity generation, and small quantities of emissions sequestered by trees and habitats.

630 new homes were completed in 2022-23. High-level estimates indicate this equates to approx 75,000 tonnes CO₂e of embodied carbon. This is a one-off impact (although future maintenance will add further emissions); nonetheless, it is still 6.5x the 2022 operational emissions,

Model parameters

The carbon model allows for a comparative analysis to test investment opportunities, design interventions and operational alternatives. The model calculates emissions spatially on a phase, village, and Ebbsfleet-wide scale, using a series of model parameters. These are configured to represent existing development and adjusted to test the carbon impacts of future development.

Buildings

Performance specifications for housing and non-domestic buildings are derived from individual planning permissions. The model can apply different standards and energy systems to future development, and assesses the impact of strategies for future retrofits and building upgrades.

Transport

Travel behaviours are extrapolated from travel plans within planning permissions by varying the number of trips, trip distance and mode share.

Waste

Both waste water management and solid waste management (transportation and processing) are modelled. The levels of waste generation and recycling are directly considered.

Facilities and Land Use Management

The model estimates carbon sequestration from natural habitats in streets and open spaces, as well as carbon generated through operational management and maintenance of the landscape and public realm.

Scenario modelling

In collaboration with representatives from across EDC, scenarios were developed to test the impact of future trends and near-term decisions on longer-term carbon outcomes.

Against a baseline comprising regulated standards, the five scenarios represent differing levels of decarbonisation ambition, structured around a distinct narrative:

- **Baseline:** Taking account of national policies, including the Future Homes Standard expected in 2025.
- **Minimum disruption:** Easy-wins, applying incremental improvements across place and people-based actions. Least intrusive for developers and residents.
- **Cost saving:** Upfront investment in building performance enhancements to secure long-term operational savings.
- **Future focus:** Place-based actions, applying large-scale system transformations, technology and innovation to improve the performance of buildings, transport systems and infrastructure.
- **Local living:** People focused actions, supporting residents to take control of their own emissions, supporting voluntary retrofit, localised travel and waste management and reduced reliance on external infrastructure
- **Maximum ambition:** Do as much as possible, as quickly as possible, applying ambitious place and people-based actions to drive carbon down as quickly as possible.

Future carbon impact

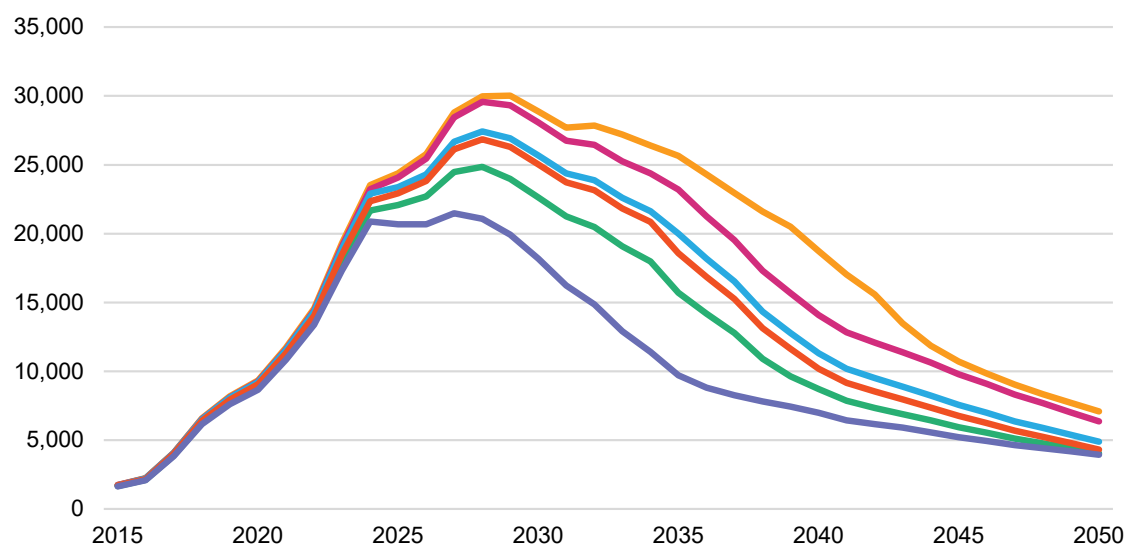
Carbon emissions under all scenarios increase by 2030-35 and then reduce by 2050. Long-term reductions are driven by grid electricity decarbonisation, but faster reductions occur under more ambitious scenarios.

The current modelling sees development complete circa 2035, following which

the annual emissions are predominately operational carbon due to the fuel and energy used in buildings and transportation, waste collection, transport and processing, and land use management.

In the scenario that models a completion date of 2035, operational carbon emissions range between 9,700 – 23,200 tCO₂e.

Annual emissions [tCO₂e]



Legend

- Scenario 1 - Baseline
- Scenario 2 - Minimum disruption
- Scenario 3 - Cost saving
- Scenario 4 - Future focus
- Scenario 5 - Local living
- Scenario 6 - Maximum ambition

Comparing pathways

Each of the scenarios describe a different decarbonisation pathway from the present day through to the completion of Ebbsfleet and on to 2050. While none of these scenarios deliver absolute zero carbon, scenarios 3-6 would deliver some of the very lowest levels of carbon emission per capita in the UK by 2050.

- The 'Maximum Ambition' scenario delivers high building performance and full heat electrification by the time Ebbsfleet is fully built out, achieving 75% emissions reduction (per capita) during this period. Some actions are within the direct control of EDC, such as the buildings standards in Ebbsfleet Central, while others rely on other stakeholders, for example, uptake of privately-owned electric vehicles.
- The 'Future Focus' and 'Local Living' scenarios achieve similar carbon outcomes through different sets of actions. This suggests that there are options for how decarbonisation can be achieved, but that it is necessary to define a coherent narrative early to guide decision-making.
- The 'Minimum Disruption' and 'Baseline' scenarios rely on external grid decarbonisation and ordinary replacement cycles, with no meaningful improvement over what was originally constructed. While they could still achieve close to net zero carbon by 2050, they would not actually contribute significantly to delivering these outcomes, missing the goal for Ebbsfleet to be an exemplar for energy generation, distribution, and efficiency.

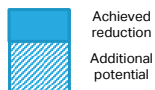
The scenario testing revealed that some of the most significant reductions were possible through softer 'influencing actions', and deep decarbonisation could not be achieved through actions within the control of EDC alone. Three of the most impactful 'influencing' type actions were:

- Promoting the replacement of gas boilers in existing homes at the end of their design life with electric heating;
- Promoting sustainable travel choices and minimising the need to travel; and
- Reducing household waste.



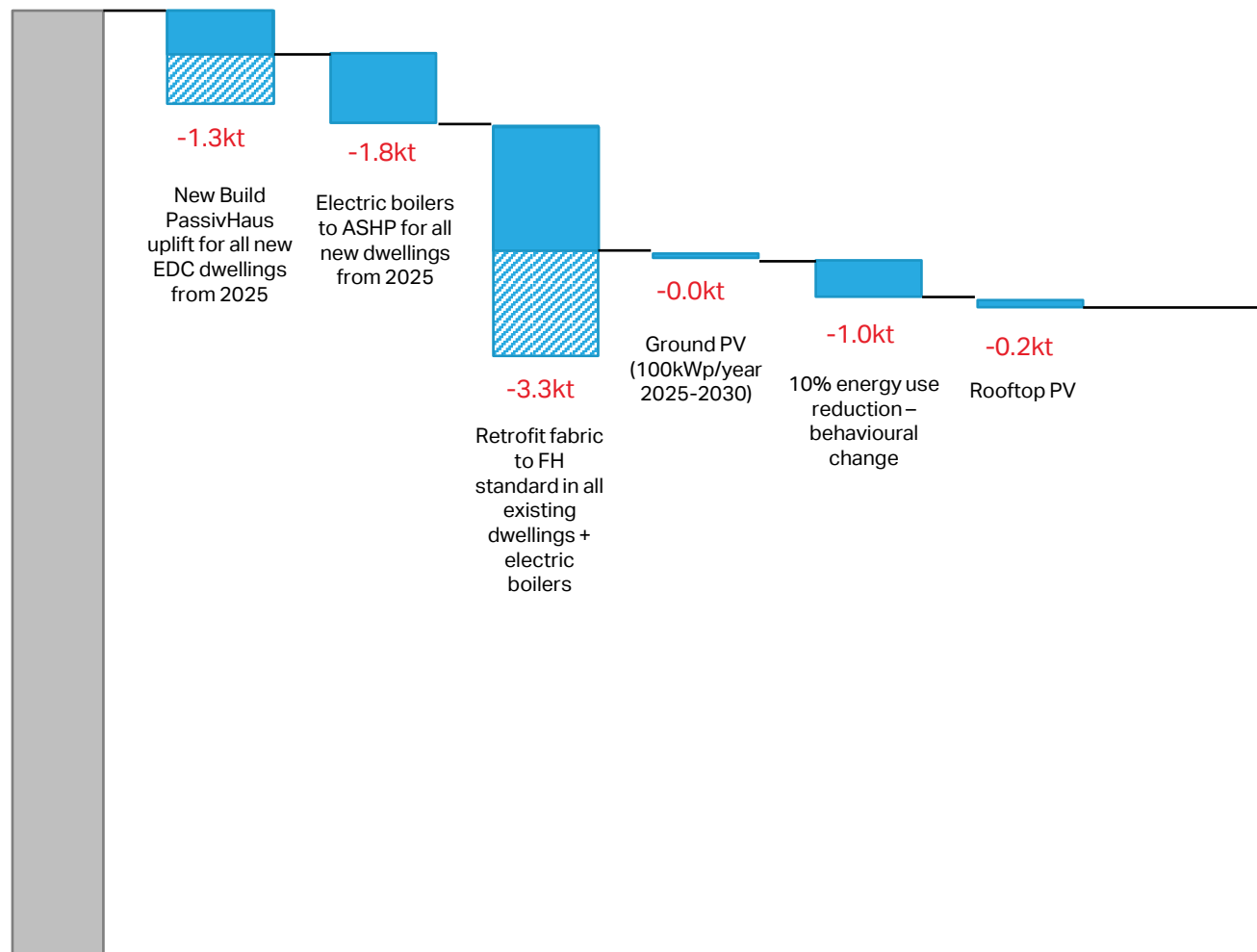
Over the period to 2050, the 'baseline' scenario has nearly double the cumulative carbon impact of the 'maximum ambition' scenario.

Legend



Preferred decarbonisation pathway

25.6kt



Preferred pathway

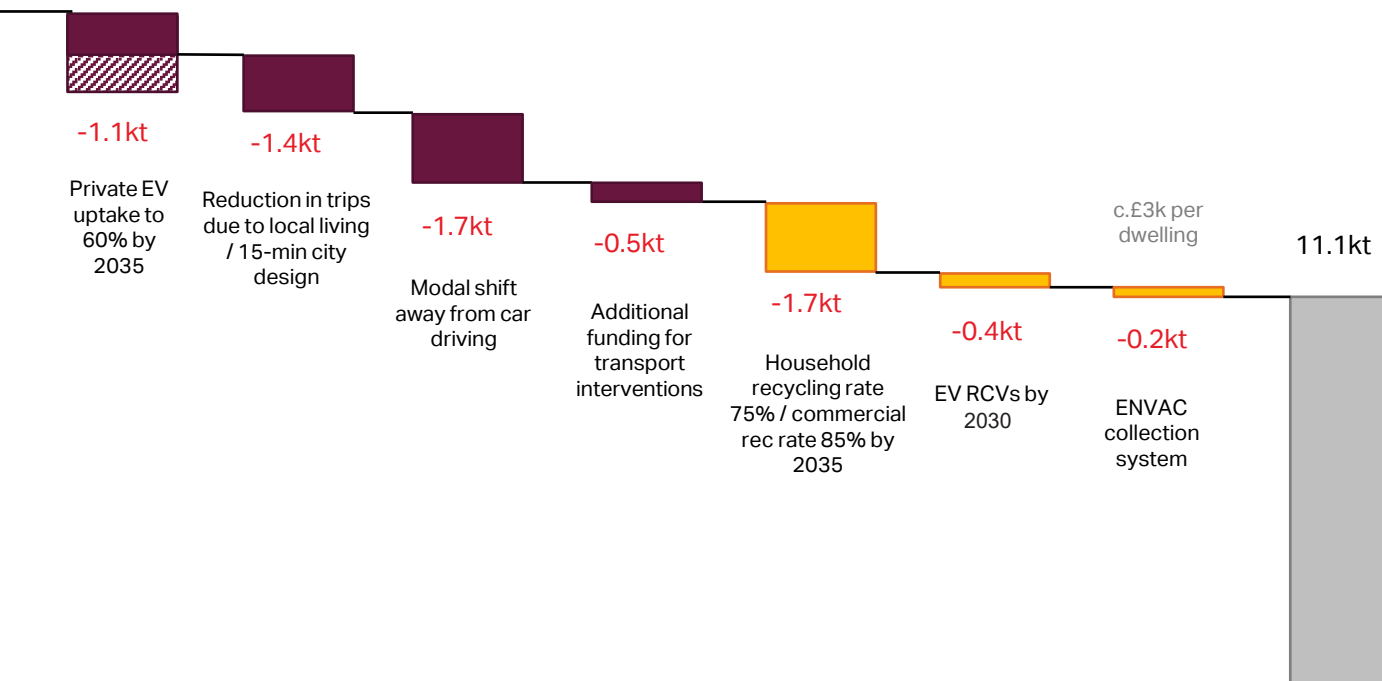
The scenario analysis establishes the pathways based on technical potential, showing that there are actions that can bring forward significant decarbonisation, even though net zero by the time Ebbsfleet is fully built-out remains challenging.

To develop a preferred pathway for Ebbsfleet, the actions were tested against the carbon management principle of control and influence. This prioritises actions that EDC can lead ('control') and promotes actions that EDC can support ('influence').

This process aligned three particular actions with the control and influence of EDC:

- Higher performance standards for new builds were assumed to apply only to EDC-led development;
- Energy efficiency retrofits were assumed to only ever happen in homes built before 2022, and in alignment with typical replacement timeframes for existing gas boilers; and
- Private EV uptake was assumed to be 60% by the completion of Ebbsfleet's build out (modelled as 2035 in the current scenario), ahead of national predictions but well-below full potential.

The carbon impact of the preferred pathway upon completion of the build-out of Ebbsfleet is shown in the waterfall diagram below.



Cost of decarbonisation

The preferred pathway shows that there is a need and opportunity for a combination of solutions, starting with budget allocation for actions across all areas in the next 5 years.

Associated costing work has been predicated on current technologies and costs, considering both an annual carbon saving basis, but also a lifetime carbon saving basis, to facilitate an accurate recognition of value for money. We anticipate that costs of newer technologies will fall over time, while there will be opportunities for economies of scale if activities can be aggregated across Ebbsfleet.

Capital cost effectiveness is the ratio of capital cost to lifecycle carbon saving. This acknowledges that the overall carbon reduction impact is a function of the lifecycle of the investment, prioritising actions with either cheaper wins, or significant long-term carbon reduction.

Actions with higher capital cost effectiveness, such as increase in household recycling rate and modal shift away from car driving, are outside EDC's direct control. Since these actions rely on many individual

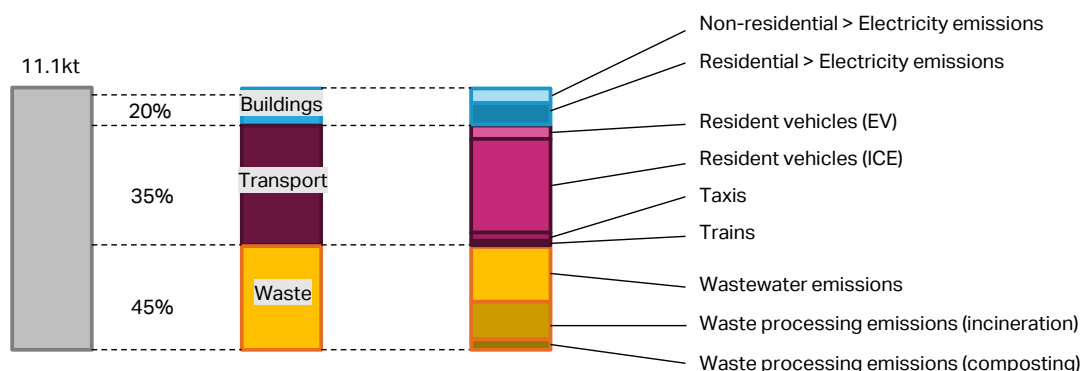
stakeholders, there is a greater risk that the carbon reductions will not be fully realised. Nonetheless, this highlights the value that can be delivered by engaging with residents and stakeholders, and enabling behaviour changes that lead to more sustainable lifestyles.

Residual emissions

The analysis indicates that there will continue to be 'residual' annual emissions when Ebbsfleet is fully built out. The action plan includes actions that aim to drive these residual emissions down further during the lifetime of the development to target absolute zero carbon. These actions are not modelled within the pathway currently as they extend beyond the control and influence of EDC, and are reliant on third parties, e.g. Kent County Council decarbonising the waste incinerator facility.

Preferred pathway residual emissions

Derived from current modelled scenario with a projected completion date of 2035





Cleary Orchard Primary Academy

For more information
"Enter website and go
purple smile"

05

Reviewing the Ebbsfleet-wide ambition

The preferred pathway provides a route to deep and long-lasting decarbonisation across Ebbsfleet. This analysis supports setting a clear and ambitious carbon target.

Defining net zero carbon

Net zero is the point at which emissions have been drastically reduced and any residual emissions are counteracted by high-quality emissions removals.

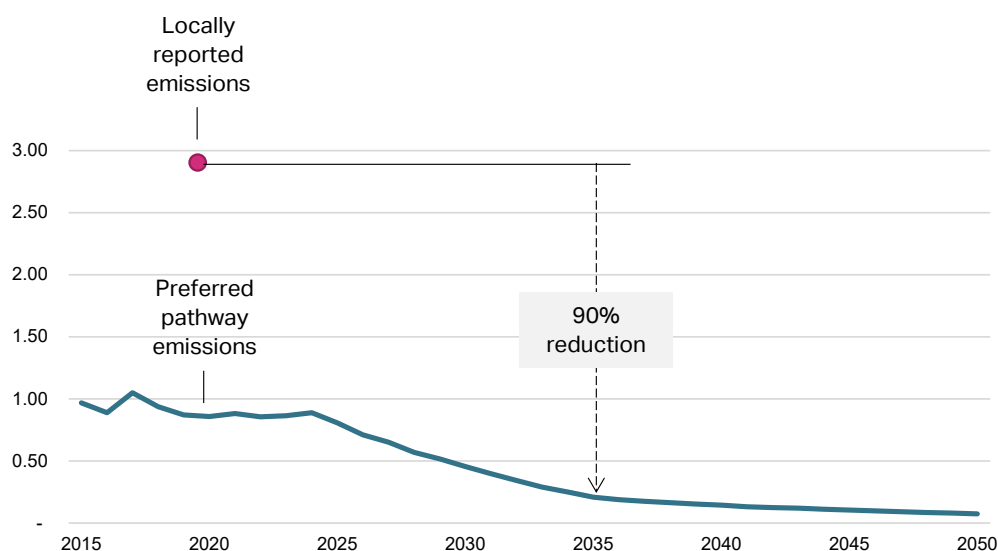
At an Ebbsfleet-wide scale, there is no formal definition of how far emissions should be reduced. The C40 Cities network expects global megacities to reduce emissions by 90% when setting long-term net zero targets. In London, the Greater London Authority (GLA) have brought forward their net zero target year to 2030, and their analysis shows that this will correspond to a 78% reduction between 1990 and 2030.

Per capita emissions

Accounting for growth is a major challenge for cities. Historically, as population or economic activity has grown, emissions have increased accordingly. This has led to many cities reporting their emissions and their target reductions in per capita terms.

Since Ebbsfleet is a new development built to contemporary building standards, the emissions per capita are already lower than established settlements in 2020. Under the preferred pathway, emissions per capita when completed are less than half those predicted in London. In fact, the preferred pathway exceeds a 90% reduction against the equivalent 2020 emissions per capita in Gravesham or Dartford.

Annual emissions per capita [tCO₂e/capita]





Ebbsfleet Carbon Ambition

Ebbsfleet will aim to be a net zero carbon development when completed, achieving more than 90% reduction in emissions per capita compared to those reported locally in 2020.

Carbon offsetting

The ambition to make Ebbsfleet net zero carbon prioritises deep decarbonisation actions, so that residual emissions are minimised. Additional actions that can reduce the residual emissions further will need to be considered at regular review points throughout the development phases.

Where there are residual emissions remaining for projects within Ebbsfleet, these could be compensated for by purchasing responsible offsets. Responsible offsets are high-quality, certifiable, and transferable units of emissions that can be purchased to balance emission outputs through investment in projects that remove or reduce emissions elsewhere. There is no carbon-offsetting scheme currently operating locally within Kent.

At a building-scale, carbon offsetting is now being pursued by local authorities in London. For example, the London Legacy Development Corporation has built up a pot in excess of £1 million from a carbon offset levy applied during planning to the predicted residual operational emissions.

However, at the city-scale, such offsetting costs become prohibitively high, and there remain significant concerns over the effectiveness and validity of current offsetting schemes.

06

Actions

The preferred pathway combines direct actions that EDC can deliver and indirect interventions to facilitate developers and residents towards lower carbon choices. It is ambitious and aims to drive change and empower Ebbsfleet residents to take ownership of a decarbonised future.

The preferred pathway represents the impact of different groups of actions. There are actions that relate to the main emissions sources (buildings, transport and waste), others that are strategic and overarching, and a few that relate to the broader benefits from land use management.

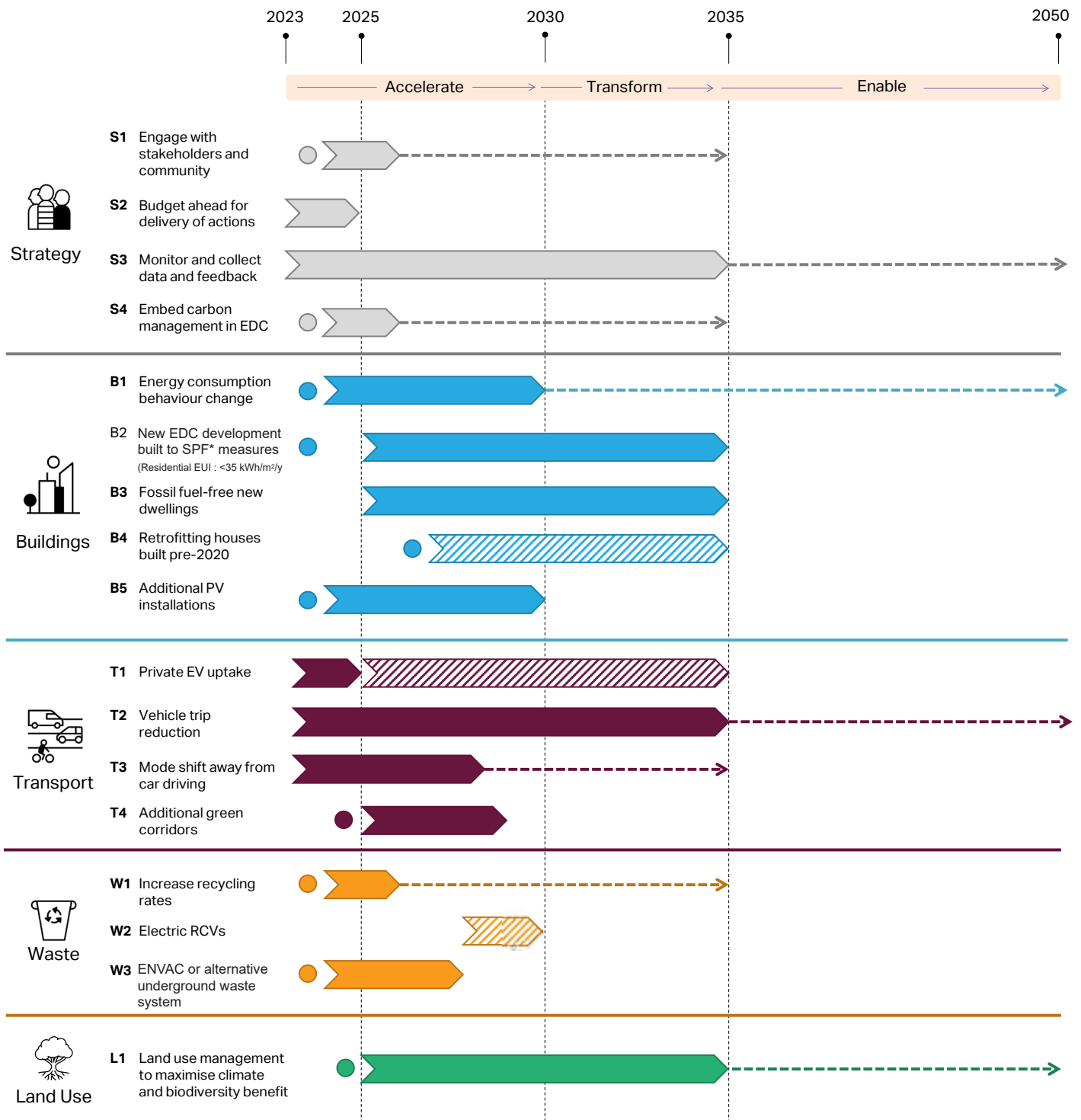
This final section provides an overview of how the actions help accelerate

decarbonisation in the period to 2030, deliver transformative decarbonisation from 2030 through to completion, then enable on-going decarbonisation once the site is fully developed.

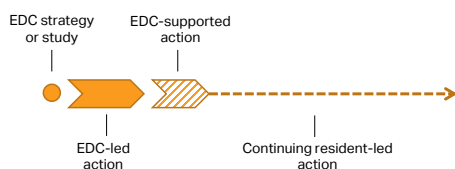
The headline actions are described in more detail in the tables that follow, alongside supporting initiatives required in the preparation and implementation of the headline actions.



Our journey to net zero



Legend



Sector	Action
 Strategy	S1. Engage from early stages with key stakeholders and the community to share EDC ambition and coordinate the delivery of the actions in the pathway. Delivering this action is supported by: S1.1. Engagement: Use community mapping to identify advocates for community-led decarbonisation and provide sufficient resources to co-create new actions and encourage wider community engagement with the decarbonisation plan. S1.2. Networks: Convene and/or contribute to informal peer group networks of similar large-scale developments to share decarbonisation lessons. S1.3. Finance: Explore potential for EDC to facilitate a Power Purchase Agreement on behalf of residents.
	S2. Budget ahead to deliver EDC-led actions that require higher capital investment (e.g. new fossil fuel-free dwellings with high energy performance and renewable energy systems). Support this through additional funding and efficiencies. Delivering this action is supported by: S2.1. Strategy: Review current and future central government funding sources, especially those directed to decarbonisation technology, dwelling retrofit and resident energy bills. S2.2. Planning: Develop EDC project management processes so that carbon becomes a decision-making criteria. S2.3. Delivery: “Bundle” interventions with planned works to minimise disruption and optimise spending.
	S3. Collect data to monitor progress towards net zero to create a ‘Monitoring and Reporting Framework’ for the decarbonisation plan. Delivering this action is supported by: S3.1. Strategy: Work with adjacent local authorities / Kent County Council to co-develop / align data management to ensure all data collection, processing and reporting has identified sources, up-to-date schedules and owners. S3.2. Engagement: Commit to a process for annual public reporting and ensure that this is shared with all key stakeholders and the community. S3.3. Planning: Develop a system that records and disseminates carbon management lessons learned throughout the development and between stakeholders.
	S4. Embed carbon management practice and knowledge throughout EDC. Delivering this action is supported by: S4.1. Resourcing: Relevant EDC staff should undertake certified Carbon Literacy training. S4.2. Engagement: Consult with major EDC suppliers to identify opportunities for reducing emissions in supply chains, especially in materials used in EDC construction, linked to upfront carbon performance requirements set out in the EDC Sustainable Performance Framework.

Sector	Action
 Buildings	B1. Behaviour change is typically the most cost effective way to reduce energy use and emissions from buildings, consumption and transport. However, it has been proven that sustained change is hard to achieve and this introduces risks in the decarbonisation delivery and alignment with net zero targets. EDC is commissioning a Communications Strategy in 2023-2024 to guide this workstream, with the aim of supporting behaviour change initiatives in the period 2025-2030. Delivering this action is supported by: B1.1. Strategy: Complete the drafting of EDC Environment Communications Strategy B1.2. Engagement: Work with the Placemaking Team to identify and develop activities to raise awareness, educate and enable sustainable behaviours
	B2. EDC development projects shall aim to apply the sustainable performance measures set out within the EDC Sustainable Performance Framework. Delivery of high energy performance dwellings can ensure comfort, minimise the energy demand (and associated emissions), and help to reduce the cost of living for residents and alleviate fuel poverty. Delivering this action is supported by: B2.1. Strategy: Aim to incorporate sustainable performance measures into EDC development project briefs and development agreements. B2.2. Engagement: Engage with key EDC contractors and local supply chains to identify constraints for delivering high energy efficiency standards, e.g. materials and skills. B2.3. Planning: Produce non-statutory planning guidance for developers to adopt higher energy performance standards.
	B3. Fossil fuel-free dwellings from 2025. Building regulations shall require all new buildings to have electric heating with high efficiency Air Source or Ground Source Heat Pumps. Delivering this action is supported by: B3.1. Strategy: Assess the feasibility for heat networks as part of a local heat and energy efficiency strategy for EDC development areas, and any other large-scale development projects. B3.2. Finance: Explore innovative finance and funding mechanisms to deliver heat networks and heating electrification.
	B4. Building fabric retrofitting to all dwellings built pre-2020 when they reach 15 years from their construction date. EDC shall look to engage with landlords and homeowners and promote the retrofitting of dwellings and the replacement of gas boilers in the retrofitted dwellings with high efficiency electric heating technologies. Delivering this action is supported by: B4.1. Engagement: Engage with Ebbsfleet Housing Associations to assess vulnerable populations subject to fuel poverty in order to prioritise technical assistance or funding assistance linked to government programmes. B4.2. Strategy: Liaise with Placemaking team to communicate and facilitate where possible emerging government retrofit programmes.
	B5. Investment in PV generation with potential for upto 100kWp new installed capacity every year for the period 2025-2030 (0.5MW requires ~0.7ha suitable land area). In addition, all new and existing development to maximise the use of the rooftop solar PV potential and utilise individual or communal electricity storage solutions where feasible. Delivering this action is supported by: B5.1. Strategy: Assess the technical feasibility for ground-mounted PV generation, local micro-grids and community energy co-operatives in EDC development areas. B5.2. Technology: Require rooftop solar PV across new EDC projects as set out in the EDC Sustainable Performance Requirements, to provide average 3.5 kW per dwelling B5.3. Finance: Explore innovative finance and funding mechanisms to incentivise the able-to-pay sector to increase uptake of rooftop solar PV (e.g. integrated with EV charging).

Sector	Action
 Transport	T1. Increase the pace of private EV uptake from residents. EV uptake will be enabled with a programme for the installation of EV chargers across Ebbsfleet and ongoing maintenance. Delivering this action is supported by: T1.1. Planning: All new development to provide EV charging provision that meets or surpasses current planning requirements and building regulations. T1.2. Finance: Explore, identify and promote emerging opportunities to deliver residents group buying discounts for EVs. T1.3. Engagement: Support the establishment of a resident-led EV organisation for sharing experience and providing information.
	T2. Vehicle trips reduction through behaviour change and traffic management initiatives. Delivering this action is supported by: T2.1. Planning: Masterplan new development to deliver walkable neighbourhoods, so that all new homes are within a maximum 5-10 minutes walk of public transport, a local centre, a primary school and one local park, and two neighbourhood parks to ensure key amenities are available locally and accessible by active travel modes. T2.2. Strategy: Engage with local authorities and KCC to assess the feasibility of low emission zones within Ebbsfleet Central.
	T3. Mode shift away from private cars through a combination of measures and infrastructure for cycling, micro mobility and active travelling. Delivering this action is supported by: T3.1. Strategy: Continue to deliver the Ebbsfleet Active Travel Strategy to deliver high quality walking and cycling infrastructure across Ebbsfleet, connecting to adjacent neighbourhoods. T3.2. Planning: Masterplan all new development sites to make access to walking and cycling networks easy and attractive, providing high quality and secure cycle parking to all homes and public facilities, and prioritise the convenience of walking, cycling and public transport over the car for journeys of 3 miles or less. T3.3. Management: Ensure parking management is operational and active, to ensure anti-social parking is discouraged, and public space is preserved for the use of pedestrians and cyclists. T3.4. Technology: Promote Mobility-as-a-Service across Ebbsfleet to provide a single integrated travel platform for local travel.
	T4. Green infrastructure and additional interventions to reduce transport emissions and enhance social value with important health and wellbeing focused co-benefits. Additional schemes include the implementation of the enhanced Urban Traffic Management System, ongoing Green Corridor improvements, Fastrack Bus Stop improvements, etc. Delivering this action is supported by: T4.1. Strategy: Investigate the feasibility, develop the business case and implement potential transport intervention schemes that have not been funded.

Sector	Action
 Waste	W1. Increase of recycling and waste minimisation at the source. EDC strategy aims to lead with engagement activities and support to increase recycling rates across Ebbsfleet and reduce emissions associated with processing the waste. Delivering this action is supported by: W1.1. Engagement: Promote uptake / use of residential green bins. W1.2. Planning: Allocate centralised waste disposal including underground waste systems and village composting locations. W1.3. Engagement: Support a community-led circular economy initiative to encourage reuse through a sharing-economy model including sharing-economy requirements in the Ebbsfleet Sustainable Performance Framework.
	W2. Electrification of refuse collection vehicles (RCVs) as they reach the end of their 15 year life time (currently understood to be approx. 2027). This measure will reduce drastically the emissions attributed to the collection and transport of waste. Current model plans for RCV fleet to be fully electrified by 2030. Delivering this action is supported by: W2.1. Strategy: Liaise with adjacent authorities and the County Council to consider and plan to optimise waste collection frequency and routes, aligned to increasing recycling rates. W2.2. Strategy: Liaise with adjacent authorities and the County Council to consider and plan for any required eRCV charging infrastructure to be integrated on-site.
	W3. Underground waste management systems. Continue to explore potential for a vacuum collection system or suitable alternative such as URS in Ebbsfleet Central and Thamesway. Vacuum collection systems utilise a network of pipes to transport waste into centralised facilities, minimising the number of trips and distance travelled of refuse collection vehicles. Delivering this action is supported by: W3.1. Planning: Review opportunities to coordinate vacuum waste system installation or alternative system with other infrastructure delivery (e.g. district heat, optical fibres). W3.2. Finance: Explore feasibility of subsidising Envac connections for non-EDC developments.
 Land Use	L1. Continually improve the quantity and quality of tree planting and biodiverse habitats, supporting multiple outcomes, including: carbon sequestration, climate resilience, biodiversity, air quality and health benefits. Delivering this action is supported by: L1.1. Strategy: Develop strategic plans for green infrastructure and biodiversity enhancement and identify opportunities to increase general ecosystem services. L1.2. Strategy: Develop a Green Infrastructure mapping tool to enable residents to become active in the management of their wildlife, habitats and green open spaces. L1.3. Planning: Continue to support the delivery of tree-lined streets and high quality, drought-tolerant planted verges across Ebbsfleet to support the biodiversity, including the 'Ebbsfleet Gateway' strategic planting programme for strategic highways. L1.4. Strategy: Undertake monitoring to measure the carbon sequestration rate of the primary habitats on-site and explore any further improvements available through different land management techniques.



Ebbsfleet's Jubilee Park opened in 2022, providing 20 hectares of new parkland set around a tranquil ecologically rich lake, with iconic chalk cliffs providing a beautiful backdrop for picnics, morning runs and dog walks.

07

Monitoring and Reporting

Monitoring and reporting outputs and outcomes is a crucial part of an effective decarbonisation plan. A monitoring and reporting framework will enable a collective approach to measure and evaluate progress across Ebbsfleet.

Outputs and outcomes

While each recommended action will have its associated outputs, the outcomes of actions within sectors are expected to be felt at an aggregate level.

As well as climate outcomes, the actions in this decarbonisation plan have the potential to deliver multiple co-benefits (such as local job creation, improved health and well-being, and greater climate resilience). A robust monitoring strategy will provide a framework for capturing progress against multiple kinds of outcomes.

Monitoring the outputs and outcomes can also reveal the extent to which actions are working towards achieving the overall goals of the Ebbsfleet development. This can help identify what has worked well and what hasn't, and to be able to trial new approaches.

Data and reporting

Regular reporting on progress against the action outputs and outcomes provides the basis for internal monitoring.

Data collection on energy end use in Ebbsfleet, including tenants and householders, and reporting of territorial emissions will be critical for tracking the progress of emissions, identify opportunities, and avoid value depreciation, carbon and unintended costs. This could be provided through data-sharing at utility provider level and sharing agreements within tenancies.

Data visualisations through interactive dashboards, frequent internal reporting and use as evidence to inform investment and costs avoidance, will facilitate the engagement with all stakeholders and highlight the importance of decisive decarbonisation actions.



Ebbfleet Decarbonisation Plan v0.4 August 2023
Developed by;

ARUP